

Application Number **10/821,063**  
Amendment dated **29 August 2006**  
Reply to Office Action of **3 May 2006**

AUG 29 2006

**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (original): A pivoting panel-mount speaker assembly comprising:

a speaker housing having a perimeter flange portion and an interior curved track extending rearwardly from the perimeter flange portion, the interior curved track having an outward facing convex surface and an inward facing concave surface;

a speaker unit having a transducer element and a speaker frame supporting the transducer element, the speaker frame having an outward facing surface configured to slidably engage the inward facing concave surface of the housing interior curved track;

a speaker support member attached to the speaker unit and having an inward facing surface configured to slidably engage the outward facing convex surface of the housing interior curved track; and

a circuit panel having speaker control circuitry mounted thereon, the circuit panel mounted to the speaker housing at one or more circuit panel attachment points;

wherein the speaker unit and the speaker support member are pivotable around a pivot point that is forward of the transducer element.

Claim 2 (original): The speaker system of claim 1, wherein the speaker unit pivots within a range of approximately  $\pm 15^\circ$  from a speaker central axis.

Claim 3 (original): The speaker system of claim 1, wherein the speaker unit pivots within a range of approximately  $\pm 30^\circ$  from a speaker central axis.

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Claim 4 (original): The speaker system of claim 1, wherein the speaker unit pivots within a range of approximately  $\pm 45^\circ$  from a speaker central axis.

Claim 5 (original): The speaker assembly of claim 1, wherein the circuit panel is in a substantially unloaded state except at the circuit panel attachment points.

Claim 6 (original): The speaker assembly of claim 1, wherein the transducer element comprises a dome.

Claim 7 (original): The speaker assembly of claim 1, wherein the transducer element comprises a cone.

Claim 8 (original): The speaker assembly of claim 1, wherein the speaker unit does not contact the circuit panel over a full pivot range of the speaker unit.

Claim 9 (original): The speaker assembly of claim 1, further comprising means for mounting a secondary speaker to the speaker unit, such that the secondary speaker is also pivotable around the pivot point.

Claim 10 (original): The speaker assembly of claim 1, wherein a secondary speaker is tiltably mounted forward of the speaker unit, and wherein the secondary speaker pivots about the pivot point.

Claim 11 (original): The speaker assembly of claim 1, wherein a secondary speaker is mounted forward of the speaker unit, and wherein the secondary speaker has a fixed orientation with respect to the main speaker unit.

Claim 12 (original): The speaker assembly of claim 1, further comprising a protective grille structure positioned substantially parallel to the perimeter flange portion.

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Claim 13 (original): The speaker assembly of claim 1, wherein the perimeter flange portion defines a speaker face plane, and wherein the pivot point is on the speaker face plane.

Claim 14 (original): The speaker assembly of claim 1, further comprising a cradle, wherein the cradle is configured to support a secondary speaker unit in front of the transducer, and wherein the secondary speaker unit is pivotable in the cradle.

Claim 15 (original): The speaker assembly of claim 1, further comprising a cradle assembly, wherein:

the cradle assembly comprises a plurality of forward-projecting support arms that intersect to form a recessed portion in front of the transducer;

the cradle recessed portion is configured to support a secondary speaker;  
and

wherein the secondary speaker unit is pivotable in the cradle recessed portion.

Claim 16 (original): The speaker assembly of claim 1, further comprising a cradle, wherein:

the cradle is configured to support a secondary speaker unit in front of the transducer;

the secondary speaker unit is pivotable in the cradle; and

the cradle is mounted to the speaker unit.

Claim 17 (original): The speaker assembly of claim 1, further comprising a cradle, wherein the cradle is configured to support a secondary speaker unit in front of the transducer, the secondary speaker unit pivotable in the cradle, wherein the cradle remains rearward of the perimeter flange portion over the full pivot range of the speaker unit.

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Claim 18 (original): The speaker assembly of claim 1, wherein the speaker support member comprises opposing inward facing support surfaces.

Claim 19 (currently amended): A speaker system comprising:

a speaker support unit configured support a first speaker, the speaker support unit having an interior support member and an exterior support member, wherein the interior and exterior support members are separated by a gap;

a speaker housing having a pivot guide that is configured to be positioned in the gap between the speaker support unit interior and exterior support members, thereby allowing the speaker support unit to pivot relative to the speaker housing; and

an auxiliary support structure that is mounted to the speaker support unit, and that is configured to support a second speaker that is pivotable in the auxiliary support structure, wherein the second speaker is positioned forward of the first speaker.

Claim 20 (original): The speaker system of claim 19, wherein the speaker support unit pivots within a range of approximately  $\pm 15^\circ$  from a speaker central axis.

Claim 21 (original): The speaker system of claim 19, wherein the speaker support unit pivots within a range of approximately  $\pm 30^\circ$  from a speaker central axis.

Claim 22 (original): The speaker system of claim 19, wherein the speaker support unit pivots within a range of approximately  $\pm 45^\circ$  from a speaker central axis.

Claim 23 (original): The speaker system of claim 19, wherein:

the speaker support unit pivots about a first pivot point;

the second speaker pivots about a second pivot point; and

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the second pivot point remains substantially stationary when the speaker support unit pivots about the first pivot point.

Claim 24 (original): The speaker system of claim 19, wherein the speaker support unit pivots about a pivot point that is located forward of the transducer.

Claim 25 (original): The speaker system of claim 19, wherein the speaker support unit and the second speaker pivot about a pivot point that is located forward of the transducer.

Claim 26 (original): The speaker system of claim 19, wherein the pivot guide comprises an interior concave annular spherical segment that is configured to slidingly engage the speaker support unit interior support member.

Claim 27 (original): The speaker system of claim 19, wherein the curved pivot guide comprises an exterior convex annular spherical segment that slidingly engages the speaker support unit exterior support member.

Claim 28 (original): The speaker system of claim 19, wherein the auxiliary support structure is mounted to the speaker support unit at no more than four attachment points.

Claim 29 (original): The speaker system of claim 19, further comprising a circuit panel that is mounted to a rearwardly extending portion of the speaker housing, wherein the circuit panel has a crossover network thereon.

Claim 30 (original): The speaker system of claim 19, further comprising a circuit panel that is mounted to a rearwardly extending exterior wall portion of the speaker housing, wherein the circuit panel has a crossover network thereon, and wherein the

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crossover network is configured to drive the primary speaker over a first frequency range and the auxiliary speaker over a second frequency range.

Claim 31 (currently amended): An apparatus comprising:

a speaker housing having a curved track with an outward facing convex surface and an inward facing concave surface;

a speaker assembly configured to support a transducer element, the speaker assembly including an outward facing surface configured to slidably engage the inward facing concave surface of the housing interior curved track; and

a speaker support member attached to the speaker assembly and having an inward facing surface configured to slidably engage the outward facing convex surface of the housing interior curved track, wherein the speaker assembly and the speaker support member are pivotable around a pivot point that is forward of the transducer element.

Claim 32 (original): The apparatus of claim 31, further comprising an auxiliary support structure that is mounted to the speaker assembly, and that is configured to support a second speaker that is pivotable in the auxiliary support structure.

Claim 33 (original): The apparatus of claim 31, further comprising an auxiliary support structure that is mounted to the speaker assembly, and that is configured to support a second speaker in a fixed orientation with respect to the speaker assembly.

Claim 34 (original): The apparatus of claim 31, further comprising an auxiliary support structure that is mounted to the speaker assembly, and that supports a second speaker that is pivotable in the auxiliary support structure, wherein the second speaker is also pivotable around the pivot point.

Claim 35 (original): The apparatus of claim 31, wherein the speaker assembly

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further comprises a perimeter flange portion defining a speaker face plane, and wherein the pivot point is on the speaker face plane.

Claim 36 (original): The apparatus of claim 31, further comprising a circuit panel that is mounted to a rearwardly extending portion of the speaker assembly.

Claim 37 (original): The apparatus of claim 31, wherein the speaker assembly is further configured to support a stator element.

Claim 38 (original): The apparatus of claim 31, wherein the speaker assembly further comprises a perimeter flange portion defining a speaker face plane, wherein the curved track extends reward from the perimeter flange.

Claim 39 (original): The apparatus of claim 31, wherein the speaker assembly further comprises a substantially circular perimeter flange portion defining a speaker face plane, wherein the curved track extends reward from the perimeter flange.

Claim 40 (original): A method of assembling a speaker assembly, the method comprising:

mounting a speaker support member to a main speaker unit such that a gap exists between a inward facing engagement surface of the speaker support member and an outward facing engagement surface of the main speaker unit, wherein the speaker support member supports a first speaker;

positioning a speaker housing interior curved track portion of a speaker housing into at least a portion of the gap, such that an exterior side of the curved track portion engages the inward facing engagement surface, and an interior side of the curved track portion engages the outward facing engagement surface; and

mounting an auxiliary support structure to the speaker support member, the auxiliary support structure supporting a second speaker forward of the first

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speaker.

Claim 41 (original): The method of claim 40, further comprising mounting a circuit panel to the speaker housing at one or more attachment points, wherein the circuit panel is in a substantially unloaded state except at the attachment points.

Claim 42 (original): The method of claim 40, wherein the inward facing engagement surface of the speaker support member is concave.

Claim 43 (original): The method of claim 40, wherein the outward facing engagement surface of the main speaker unit is convex.

Claims 44–48 (cancelled).

Claim 49 (original): An apparatus comprising:

- a speaker housing having a curved track with an outward facing convex surface and an inward facing concave surface;

- a speaker assembly configured to support a transducer element, the speaker assembly including an outward facing surface configured to slidably engage the inward facing concave surface of the housing interior curved track;

- a speaker support member attached to the speaker assembly and having an inward facing surface configured to slidably engage the outward facing convex surface of the housing interior curved track, wherein the speaker assembly and the speaker support member are pivotable around a first pivot point that is forward of the transducer element; and

- an auxiliary support structure that is mounted to the speaker assembly, and that is configured to support a plurality of auxiliary speakers that are pivotable within the auxiliary support structure, wherein the auxiliary speakers are positioned forward of the transducer element.



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Claim 50 (original): The apparatus of claim 49, wherein the auxiliary support structure supports two auxiliary speakers.

Claim 51 (original): The apparatus of claim 49, wherein the auxiliary speakers pivot about a single second pivot point.

Claim 52 (original): The apparatus of claim 49, wherein at least one of the auxiliary speakers pivots about the first pivot point.

Claim 53 (original): The apparatus of claim 49, further comprising a circuit panel that is mounted to a rearwardly extending portion of the speaker housing.

Claim 54 (original): The apparatus of claim 49, further comprising:

a circuit panel that is mounted to a rearwardly extending portion of the speaker housing; and

a crossover network included on the circuit panel, wherein the crossover network is configured to drive the transducer element over a first frequency range, and to drive the auxiliary speakers over a second frequency range.

Claim 55 (original): The apparatus of claim 49, further comprising a circuit panel that is mounted to a rearwardly extending portion of the speaker housing at a plurality of attachment points, wherein the circuit panel is in a substantially unloaded state except at the attachment points.